

WHAT IS CLAIMED IS:

1. A method of making a surface covering having a natural wood, stone, marble, granite, or brick appearance, comprising:
  - a) providing a surface covering comprising a backing layer; a foamable layer on said backing layer; and a design layer having a design selected from the group consisting of a wood, stone, marble, granite, and brick pattern printed thereon and located on said foamable layer; wherein a portion of said design includes joint or grout lines printed with at least one retarder composition;
  - b) providing a wear layer on top of said design layer and curing said wear layer, thereby expanding said foamable layer to form a foam layer and chemically embossing the portion of said design layer where said printed joint or grout lines are located;
  - c) subjecting said surface covering of (b) to sufficient cooling to reduce the temperature of the cured wear layer to approximately ambient temperature;
  - d) subjecting the cured and cooled wear layer of said surface covering of (c) to a sufficient temperature to soften said cured and cooled wear layer;
  - e) mechanically embossing a surface texture selected from the group consisting of a natural wood, stone, marble, granite, and brick onto said softened wear layer; and

f) setting said mechanically embossed surface texture in said wear layer.

2. The method of claim 1, wherein said wear layer comprises polyvinyl chloride.

3. The method of claim 1, wherein said retarder composition comprises acrylic resin binder, alcohol, water and an inhibitor selected from the group consisting of tolyltriazole, benzotriazole, fumaric acid, malic acid, hydroquinone, dodecanethiol, succinic anhydride, and adipic acid.

4. The method of claim 1, wherein said inhibitor is tolytriazole.

5. The method of claim 1, wherein the method further comprises providing a top coat on said mechanically embossed wear layer after step (f).

6. The method of claim 5, wherein said top coat comprises a urethane acrylate.

7. The method of claim 1, wherein said surface covering further comprises a strengthening layer located between said backing layer and said foamable layer.

8. The method of claim 1, wherein, said sufficient temperature in (d) is from about 195°C to about 215°C.

9. A method for making a surface covering comprising:

- a) providing a surface covering comprising a backing layer; a foamable layer located on top of said backing layer; and a design layer located on top of said foamable layer and having a design, wherein a portion of said design includes a pattern created with at least one retarder composition;
- b) providing a wear layer on top of said design layer and curing said wear layer, thereby expanding said foamable layer to form a foam layer, and chemically embossing areas of said design layer where said portion of pattern was created with at least one retarder composition;
- c) subjecting said surface covering of (b) to sufficient cooling to reduce the temperature of the cured wear layer to approximately ambient temperature;
- d) subjecting the cured and cooled wear layer of said surface covering of step (c) to a sufficient temperature to soften said cured and cooled wear layer;
- e) mechanically embossing a surface texture on said softened wear layer; and
- f) setting said mechanically embossed surface texture in said wear layer.

10. The method of claim 9, wherein the method further includes providing a top coat on said mechanically embossed wear layer after step (f).

11. A surface covering having a natural wood, stone, marble, granite, or brick appearance, comprising:

- a backing layer;
- a foam layer located on said backing layer;
- a design layer located on said foam layer and having a design selected from the group consisting of natural wood, stone, marble, granite, and brick, wherein said design includes chemically embossed joint or grout lines; and
- a wear layer located on top of said design layer and mechanically embossed with a surface texture selected from the group consisting of natural wood, stone, marble, granite, and brick, wherein the surface texture is mechanically embossed in the wear layer after first subjecting said wear layer to a sufficient temperature to soften said wear layer.

12. The surface covering of claim 11, wherein said wear layer comprises polyvinyl chloride.

13. The surface covering of claim 11, wherein said joint or grout lines are chemically embossed with a retarder composition comprising acrylic resin binder, alcohol, water and an inhibitor selected from the group consisting of tolyltriazole,

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benzotriazole, fumaric acid, malic acid, hydroquinone, dodecanethiol, succinic anhydride, and adipic acid.

14. The surface covering of claim 13, wherein said inhibitor is tolyltriazole.
15. The surface covering of claim 11, wherein said surface covering further comprises a top coat located on said mechanically embossed wear layer.
16. The surface covering of claim 15, wherein said top coat comprises acrylated urethane.
17. The surface covering of claim 11, wherein said surface covering further comprises a strengthening layer located between said backing layer and said foam layer.
18. The surface covering of claim 11, wherein a portion of said design comprises a non-retarder ink composition.
19. A surface covering comprising:
  - a backing layer;
  - a foam layer located on said backing layer;
  - a design layer located on said foam layer and having a design, wherein said design includes a chemically embossed portion; and

a wear layer located on said design layer and mechanically embossed with a surface texture, wherein the surface texture is mechanically embossed in the wear layer after first subjecting said wear layer to a sufficient temperature to soften said wear layer.

20. The surface covering of claim 19, wherein said surface covering further comprises a top coat located on said mechanically embossed wear layer.

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add 1

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